MINUTES OF THE TAC MEETING OF THE WOOD RIVER WATERSHED ADVISORY GROUP TUESDAY, MAY 27, 2003 FAIRFIELD, ID

Chairman Daryle James called the meeting to order with the following in attendance: Joe Schwarzback, Bill Davis, Clint Krahn, Chuck Pentzen, DEQ representatives Jennifer Claire, Sonny Buhidar and Secretary Dana Sturgeon.

Jennifer presented the following information update for Camas dated 2001-2002:

	Normal	Maximum	Average	Minimum
Temp	12	21.5	12.0	1.85
DO	12	11.8	7.7	4.97
Sp Cond	12	433	189.6	71.8
PH	12	10.1	8.05	7.04
Turb	12	28.8	15.0	2.2
TSS	11	78	14.9	0.5
T-Phos	11	0.246	0.105	0.024
NO3+NO2	6	0.975	0.225	0.0025
Tot NH3	6	1.17	0.25	0.005
Ecoli	11	68	15.7	1
BOD	6	22	8.8	1.5

Sonny made the following slide presentation: "**Geomorphological Interpretations from Soil Associations of the Camas Creek Subbasin 303(d) Streams and Its Implications to Water Quality"**

STATSGO Soils - What is it?

This data set is a digital general **soil association map** developed by the National Cooperative Soil Survey and distributed by the Natural Resources Conservation Service (formerly Soil Conservation Service) of the U.S. Department of Agriculture.

It consists of a broad based inventory of soils and non-soil areas that occur in a **repeatable pattern on the landscape** and that can be cartographically shown at the scale mapped.

The soil maps for STATSGO are compiled by **generalizing more detailed soil survey maps**. Where more detailed soil survey maps are not available, data on geology, topography, vegetation, and climate are assembled, together with Land Remote Sensing Satellite (LANDSAT) images.

Soils of like areas are studied, and the **PROBABLE** classification and extent of the soils are determined. Ground truthing is recommended.

STATSGO Protocols

STATSGO was designed primarily for regional, multi-county, river basin, State, and multi-state resource planning, management, and monitoring.

STATSGO data are not detailed enough to make interpretations at a county level. This soil survey product is not designed for use as a primary regulatory tool in permitting or citing decisions, but may be used as a reference source.

The use of these data is not restricted and may be interpreted by organizations, agencies, units of government, or others; however, they are responsible for its appropriate application.

STATSGO - Definition

Entity: a class or type of thing involved in the mapping process at a given level of the mapping hierarchy. An entity may be a site series, a bio-geo-climatic unit, an eco-section, etc.

Simple entities: a single entity (e.g., one site series characterizing a polygon).

Complex entities: a mix of two or more entities in an unpredictable pattern; the complex entity inherits the properties of its members. Unlike compound entities, the definition of a complex entity does not include a predictable or derivable pattern of the member entities that would allow their specific location at a larger scale.

Compound entities: a predictable and recurring **association** of two or more entities; the compound entity inherits the properties of its member components. Examples include soil associations or concentric wetland ecosystem units.

Geology - Consideration for the position and makeup of the rocks that make up the structure and substrate of the landform.

Soil - Consideration for the position and makeup of the soil textures and soil horizons that make up the structure and substrate of the landform.

Geomorphology - Consideration for the movement of substrates through a stream and how the geology influences that movement.

A river system consists of a main channel and all of the tributaries that flow into it. Within a river system, the surface of the ground slopes toward the network of tributaries, so the drainage system acts as a funneling mechanism for removing surface runoff and weathered rock debris. A typical river system can be divided into three subsystems:

1. Collecting System - branches, headwaters reach
2. Transporting System - mainstem or trunk
3. Dispersing System - roots, confluence

The geology is interpreted according to key **geologic codes** that describe the type of rock and more explicitly the "age" of the rock:

Qa = Quaternary alluvium.
Tev = Eocene silicic and basaltic volcanic ejecta flows.
Qpu?b = Upper Pleistocene Snake Plain lava flows, lava tube.
Dc = Devonian thrusted deep-water siliceous argillite and quartzite.
Qrb = Recent, relatively unweathered Snake Plain basalt flows and cinder cones, lava tube.
Ki = Cretaceous plutons.

What is the Question We Need to Answer?

What is the condition of the water if there is erosional runoff above and beyond normal, natural runoff? Keep in Mind - We are Only Looking at the Streams that are on the 303(d) list. All streams have normal, natural runoff. It's the excess of that runoff that has the potential to impact water quality above and beyond normal conditions.

STATSGO Soils - Camas Creek
Based on the STATSGO soils, Camas Creek may be divided into three segments:

Upper Segment -	ID272 = 5% = Elkcreek - Gaib - Winu
	ID258 = 13% = Simonton - Bauscher - Harahill
Middle Segment -	ID270 = 60% = Marshdale - Strom - Houk
Lower Segment -	ID269 = 2% = Simonton - Brinegar - Strom
	ID254 = 20% = Simonton - Brinegar – Peevywell

Geology - Geomorphology - Camas Creek
Based on the geology (geomorphology) of Camas Creek, the system can be divided into three segments:

Upper Segment -	17% of 303(d) Segment
	Qpmb (84%), Tpf (14%), Tpb (2%)
Middle Segment -	58% of 303(d) Segment
	Qa (74%), Qpmb (22%), Tev (3%), Tpb (1%)
Lower Segment -	25% of 303(d) Segment
	Qa (99%), Qpmb (1%)

Overall makeup - Qa > Qpmb > Tpf > Tev > Tpb
Geology - Geomorphology - Camas Creek
Overall makeup - Qa > Qpmb > Tpf > Tev > Tpb

Qa = Quaternary alluvium. Generally are considered detrital deposits of silt and silty clay, but may include other larger rock forms from sand and gravel to small or large boulders.
Qpmb = Middle Pleistocene basalt (dark-colored igneous rock) that is commonly extrusive.
Tpf = Pliocene silicic (rocks that are granitic and rhyolite) welded tuff ash (all consolidated pyroclastic rocks) and flow rocks.
Tev = Eocene silicic (rocks that are granitic and rhyolite) and basaltic (basalt rocks are igneous rocks solidified from molten magma) volcanic ejecta flows.
Tpb = Pliocene olivine (green or brown rock-forming mineral that is igneous, like basalt) basalt flows and associated tuff and detritus

Geology - Geomorphology - Qa

Alluvium is young sediment—freshly eroded rock particles that have come off the hillside and been carried by streams. The image below shows part of an alluvial terrace in the southern Sierra Nevada, where boulders as large as 1 meter mix with sand and gravel, washed down a side canyon into the Kern River valley. The Kern has undercut the terrace here and carried away part of the deposit, starting a new cycle of transport and deposition somewhere downstream.

Geology - Geomorphology - Qa
Alluvial sediment is pounded and ground into finer and finer grains each time it moves downstream. The process can take thousands of years. The photo to the right is from a small

alluvial fan at the foot of the Temblor Range in west-central California. Here the alluvium is all of gravel size and smaller. Each of the visible layers in this streambank exposure was probably laid down in a single flood event. The feldspar and quartz minerals in alluvium weather slowly into clays and dissolved silica. Most of that material eventually (in a million years or so) ends up in the sea, to be slowly buried and turned into new rock.

Camas Creek System - Geology
Upper - Qpmb
(basalt rocks)
Middle - Qa
(eroded rock, gravel, sands, silt, and silty clay)
Lower – Qa

Camas Creek System - Soils
Upper - ID258
Middle - ID270
Lower - ID254

Mollisols
Camas Creek soils are Mollisols. These are soils that are nearly black, organic-rich surface horizons with high base (calcium and magnesium) supply.

Soils + Geology Ranking Model
WQ Ranking Model = Soil Depth + Drainage + Permeability + Slope + Texture + Runoff

	1	2	3	4	5	Rank	
	Excellent		Good	Fair	Poor	Very Poor	Qualitative
	20%	40%	60%	80%	100%	Direct %	
	80%	60%	40%	20%	0%	Report Card	
Soil Depth	1					Excellent	
Drainage						5	Very Poor
Permeability			3			Fair	
Slope			3			Fair	
Texture		1					Excellent
Runoff	1					Excellent	
Total	14						
Mean		2.3 “Good”					

Camas Creek System Soils + Geology + Water Quality

	Upper Segment	**Middle Segment**	**Lower Segment**
	[17% of Segment]	[58% of Segment]	[25% of Segment]
1. Geology	Qpmb (84%)	Qa (74%)	Qa (99%)
	Tpf (14%)	Qpmb (22%)	Qpmb (1%)
	Tpb (2%)	Tev (3%)	
		Tpb (1%)	

2. Soils ID258 (72%)-Mollisols ID270 (100%)-Mollisols ID254 (91%)-Mollisols

Soil Depth	1	2	3	1	2	1	1	1	2	
Drainage	1	1	1	5	4	4	1	2	4	
Permeability	2	2	3	3	2	2	2	2	2	
Texture	3	3	3		3	3	4	3	3	3
Slope	2	4	2	1	1	1	2	1	1	
Runoff	2	2	2	1	1	1	2	1	1	
WQ	Good	Good	Good	Good	Good	Good		Good	Good	Good

	ID272 (28%)-Mollisols			ID258 (9%)-Mollisols		
Soil Depth	3	5	3	1	1	3
Drainage	1	1	1	1	2	5
Permeability	2	2	2	2	2	2
Texture	3	4	4	3	3	3
Slope	4	4	4	2	1	4
Runoff	2	2	3	2	1	2
WQ	Fair	Fair	Fair	Good	Good	Fair

Soldier Creek - Geology + STATSGO Soils

1. Geology- 100% Qa = Detrital deposits of silt, silty clay, gravels sands, and rocks

2. Soils-

90% ID270: Mollisols:	Marshdale -	Strom -	Houk	
Soil Depth:	1	2	1	
Drainage:	5	4	4	
Perm:	3	2	2	
Texture:	3	3	4	
Slope:	1	1	1	
Runoff:	1	1	1	
WQ Cond:	Good	Good	Good	GOOD

10% ID269: Mollisols:	Simonton -	Brinegar -	Strom	
Soil Depth:	1	1	2	
Drainage:	1	2	4	
Perm:	2	2	2	
Texture:	3	3	3	
Slope:	2	1	1	
Runoff:	2	1	1	
WQ Cond:	Good	Good	Good	GOOD

Little Beaver Creek and Beaver Creek Geology + STATSGO Soils

1. Geology - Little Beaver Creek: Ki (98%, granitics), Qa (2%, at confluence)
   Beaver Creek: Ki (100%, granitics)

2. Soils - Little Beaver Creek: Mollisols

	90% Marshdale-Strom-Houk			10% Simonton-Brinegar-Strom		
Depth	1	2	1	1	1	2
Drainage	5	4	4	1	2	4
Permeability	3	2	2	2	2	2
Texture	3	3	4	3	3	3

Slope	1	1	1	2	1	1
Runoff	1	1	1	2	1	1
WQ	Good	Good	Good	Good	Good	Good

Beaver Creek: Mollisols

	100% Moonstone-Earcree-Gaib		
Depth	3	2	5
Drainage	1	1	1
Permeability	4	4	2
Texture	2	2	2
Slope	4	4	4
Runoff	3	3	2
WQ	Fair	Good	Fair

Willow Creek Geology + STATSGO Soils

1. Geology - Qa (95%) alluvial + Qpmb (5%) basalt (at confluence)
2. Soils - Divide Creek into three segments:

ID250 (41%) - Upper Segment: Mollisols

Moonstone-Earcree-Gaib = like Little Beaver Creek

Fair - Good - Fair

ID254 (47%) - Lower Segment: Mollisols

Simonton-Brinegar-Peevywell = like lower segment of Camas Creek

Good - Good - Good

ID251 (12%) - Middle Segment: Mollisols

	Laurentzen-Gaib-Mulshoe		
Depth	2	5	3
Drainage	1	1	1
Permeability	2	2	2
Texture	3	2	2
Slope	2	4	4
Runoff	1	2	3
WQ	Good	Fair	Good

Mormon Reservoir Geology + STATSGO Soils

1. Geology - Within the Reservoir:

OW (70%) - Open water; Tev (18%) - Eocene granitics & basalt; Qpmb (12%) - Pleistocene basalt

- Edges of Reservoir:

Qpmb (60%) - Pleistocene basalt; Qa (15%) - Alluvial material; Tpb (10%) - Pliocene basalts;

Tev (10%) Eocene granitics and basalt; Tpf (5%) - Pliocene granitics

2. Soils - Within the Reservoir:

IDW (100%) - Water

Edges of Reservoir: Mollisols

ID268 (80%); ID270 (15%) - like Soldier Creek; ID269 (5%) - like Soldier Creek (upper)

	ID268 (80%) - Manard-Rock Outcrop-Magic		
Depth	3	-	3
Drainage	1	-	1
Permeability	1	-	1

Texture		4	-	4
Slope		1	-	1
Runoff		1	5	1
WQ	Good	Very poor		Good

McKinney Creek Geology + STATSGO Soils

1. Geology -
   - Tpf (50%) - Pliocene granitics - Headwaters to middle
   - Qa (45%) - Alluvial material - Middle portion to Reservoir
   - Tpb (5%) - Pliocene basalts - Portions of headwaters to middle
2. Soils -
   - ID270 (60%) - like Soldier Creek: [Good - Good - Good]
     Mollisols
   - ID272 (40%) - like Camas Creek (upper portion): [Fair - Fair - Fair]
     Mollisols

Camp Creek Geology + STATSGO Soils

1. Geology -
   - Qp?g (50%) - Pleistocene gravels: Throughout entire segment
   - Qpmb (25%) - Pleistocene basalt: Middle to lower segments
   - Ki (20%) - Cretaceous granitics: Headwaters and upper segment
   - Qa (5%) - Alluvial material: Middle segment

2. Soils -
   - ID250 (40%) - Upper Segment: Like Little Beaver Creek
     Marshdale-Strom-Houk = Good - Good - Good
     Mollisols

   - ID251 (20%) - Middle Segment: Like middle segment of Willow Creek
     Laurentzen-Gaib-Mulshoe= Good - Fair - Good
     Mollisols

   - ID254 (40%) - Lower Segment: Like lower segment of Camas Creek
     Simonton-Brinegar-Peevywell=Good - Good - Good
     Mollisols

Elk Creek Geology + STATSGO Soils

1. Geology -
   - Qpmg (95%) - Pleistocene alluvial: Majority of segment except for the confluence to Camas Creek
   - Qpmb (5%) - Pleistocene basalt: Confluence to Camas Creek
2. Soils -
   - ID254 (100%): Like lower segment of Camas Creek
     Simonton-Brinegar-Peevywell = Good - Good - Good
     Mollisols

Corral Creek Geology + STATSGO Soils

1. Geology -
   - Qa (95%) - Quaternary alluvials: Majority of stream except for the confluence to Camas Creek
   - Qpmb (5%) - Pleistocene basalts: Confluence to Camas Creek

2. Soils -
ID270 (100%): Like Soldier Creek
Marshdale-Strom-Houk = Good - Good - Good
Mollisols

Cow Creek - Geology + STATSGO Soils

1. Geology - Kii (100%) - Cretaceous granitics
2. Soils - ID250 (100%): Like Little Beaver Creek
Moonstone - Earcree - Gaib = Fair - Good - Fair
Mollisols

Wild Horse Creek - Geology + STATSGO Soils

1. Geology -
Qa (98%) - Quaternary alluvials: Majority of the segment
Qpmb (2%) - Pleistocene basalts: Near Highway 20
2. Soils - ID270 (95%) - Entire portion except: near Hwy 20
Marshdale - Strom - Houk = Good - Good - Good
Mollisols
ID258 (5%) - Portion near Hwy 20
Simonton - Bauscher - Harahill=
Mollisols

The June 2003 TAC meeting will be held at 7:30 P.M. on the 24th in Carey. The July meeting was scheduled for the 22ND in Fairfield at the Sawtooth Forest Service Office.